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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
VAN, LUAN V	

ART UNIT	PAPER NUMBER
1795	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/507,137	SCHELLER ET AL.	
	Examiner	Art Unit	
	Luan V. Van	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 August 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's amendment of August 14, 2007 does not render the application allowable.

Status of Objections and Rejections

The objection to the disclosure has been withdrawn in view of Applicant's amendment.

All rejections from the previous office action are withdrawn in view of Applicant's amendment.

New grounds of rejection under 35 U.S.C. 103(a) are necessitated by the amendments.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 14, 15, 22 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Tilton (US patent 4680100).

Regarding claim 14, Tilton teaches a method of treating workpieces with a processing fluid in a tank containing the fluid, the method comprising: providing a protective carrier 12 (Fig. 2) at the tank, the protective carrier comprising at least one aperture; conveying the workpieces to the tank (column 5 lines 11-14); introducing the workpieces into the protective carrier (Fig. 2); transferring the protective carrier together with the workpieces into the tank (Fig. 1); and treating the workpieces with the processing fluid. Treating a flat and flexible work piece is an intended use of the instant invention and thus is not given patentability weight.

Regarding claim 15, Tilton teaches wherein the fluid is an electrochemical processing fluid and is applied to the protective carrier through at least one aperture therein.

Regarding claim 22, Tilton teaches wherein the protective carrier comprises side walls and a bottom wall, the apertures being evenly spaced apart and distributed over the side and/or bottom walls (Fig. 2).

Regarding claim 28, Tilton teaches wherein the protective carrier is localized at the tank (Fig. 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-4 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tilton (US patent 4817650) in view of Friedman (US patent 2461113).

Regarding claim 1, Tilton teaches a device for treating workpieces with a processing fluid, the device comprising: a processing tank A containing the processing fluid; at least one protective carrier 12 (Fig. 2) for receiving the workpieces and being adapted to be received by the tank containing the fluid; a transport system (column 2 lines 21-24) being adapted to convey the workpieces to the tank; means (column 5 lines 11-14) for transferring the protective carrier together with the workpieces into the tank; and at least one aperture in the protective carrier. The limitations of treating flat and flexible workpieces and not deforming or shifting the workpieces are intended uses of the instant invention, and thus are not given patentability weight.

Tilton differ from the instant claims in that the reference does not explicitly teach a transport system being adapted to introduce the workpieces into the protective carrier.

Friedman teaches a hoist for vertically moving a workpiece into or out of an electroplating tank (Fig. 1). The hoist of Friedman would be capable of introducing the workpieces into the protective carrier of Tilton.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the apparatus of Tilton by introducing the workpieces into the protective carrier using the hoist of Friedman, because it would enable continuous processing of a plurality of workpieces. Furthermore, using the transport system to introduce the workpieces into the protective carrier is a process limitation. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997), MPEP 2114. Furthermore, a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham,* 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Regarding claim 2, the apparatus of Tilton is structurally capable of being used with a wet-chemical or electrochemical processing fluid.

Regarding claim 3, Tilton teaches wherein the means for admitting the processing fluid in the protective carrier comprises at least one aperture (holes through the basket) in the protective carrier.

Regarding claim 4, Tilton teaches wherein the protective carrier comprises side walls and a bottom wall, the apertures being evenly spaced apart and distributed over the side and/or bottom walls (Figs. 1-4).

Regarding claim 27, Tilton teaches wherein the protective carrier is localized at the tank (Fig. 1).

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tilton.

Tilton teaches the method as described above. Tilton differ from the instant claims in that the reference does not explicitly teach only allowing the processing fluid to flow through the apertures in two side walls of the protective carrier.

Tilton teaches a basket having apertures on all sides of the walls, because a uniform coating is to be electroplated on all sides of the workpiece.

It would have been obvious to one having ordinary skill in the art to have modified the protective carrier of Tilton such that the fluid is allowed to flow through the apertures in only two sides of the protective carrier in order to electroplate a metal coating uniformly on only two sides of the workpiece.

Claims 5, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tilton in view of Friedman, and further in view of Forand.

Tilton and Friedman teach the apparatus as described above. Tilton differ from the instant claims in that the reference does not explicitly teach the specific aperture size of the instant claim.

Forand teaches an anode containment basket, i.e. protective carrier, for holding soluble anodes within a plating bath of a continuous electroplating line, wherein the

holes of the basket have the diameter of 1/4", or an area of 127 mm^2, which is within the range of the instant claim.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the apparatus of Tilton by using the aperture size of Forand, because it would minimize the amount of stray cross currents, and thereby direct more electrical energy between the electrodes in the basket and outside of the basket (column 3 lines 50-55 of Forand).

Regarding claims 11 and 12, it would have been obvious to one having ordinary skill in the art to have recognized that a basket having the aperture size of Forand would create a difference in the levels of the processing fluid inside and outside the protective carrier as it is being immersed in the electrolyte solution, because the smaller aperture size would initially prevent the electrolyte from completely filling the inside of the protective carrier.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tilton in view of Friedman, Forand, and further in view of Ewell (US patent 1374370).

Tilton, Friedman and Forand teach the apparatus as described above. Tilton differs from the instant claims in that the reference does not explicitly teach an orifice plate.

Ewell teaches an orifice plate wherein a series of perforations are alternately shifted into and out of registration by reciprocation of said orifice plate, thus providing for an intermittent escape of liquid (column 3 lines 43-56)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the apparatus of Tilton, Friedman and Forand by using the orifice plate of Ewell, because it would allow the flow rate of the liquid to be controlled.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tilton in view of Friedman, and further in view of Uzoh et al. (US publication 2001/0050233).

Tilton teaches the apparatus as described above. Tilton differs from the instant claims in that the reference does not explicitly teach that the aperture diameters are smaller in the border regions.

Uzoh et al. teach an electrodeposition/electro-etching system wherein baffle plates having smaller aperture diameters in the border regions (Figs. 2-5) are used to promote uniformity of deposition or etching.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the apparatus of Tilton by using the baffle of Uzoh et al. wherein the aperture diameters are smaller in the border regions, because it would promote uniformity of deposition or etching.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tilton in view of Friedman, and further in view of Marek (US patent 2365202).

Tilton teaches the apparatus and method as described above. Tilton differs from the instant claims in that the reference does not explicitly teach a drain gate.

Marek teaches a tank having drain gates 16 (Fig. 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the apparatus and method of Tilton by using the drain gate of Marek, because it would facilitate removal of liquid in a processing tank.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tilton in view Friedman, and further in view of Le Bras et al. (US patent 3784460).

Tilton and Friedman teach the apparatus and method as described above. Tilton differs from the instant claims in that the reference does not explicitly teach a reservoir and delivery system (claims 9, 10).

Le Bras et al. teach an electrodepositing apparatus including a reservoir tank 13 (Fig. 3) and a delivery system via valve 15 and line 17. In addition, Le Bras et al. teach conveyor 37 for conveying a workpiece into the electrolytic bath.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the apparatus of Tilton by using the reservoir and delivery system of Le Bras et al., because they would help purge ions, contaminants and impurities from the system without substantially removing the desired constituents (column 2 lines 40-44 of Le Bras et al.). The system of Le Bras et al. would inherently create a difference in the levels of the processing fluid when the protective carrier of Tilton is submerged in a plating tank with the conveyor of Le Bras et al., because the protective carrier of Tilton would impede the flow of the fluid.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tilton in view of Friedman, Forand, and further in view of Marek.

Tilton, Friedman and Forand teach the apparatus as described above. Tilton differs from the instant claims in that the reference does not explicitly teach a drain baffle.

Marek teaches a tank having drain gates 16 (Fig. 2). The drain gates of Marek are broadly interpreted to read on the baffles of the instant claim.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the apparatus of Tilton, Friedman and Forand by using the drain gate of Marek, because it would facilitate complete removal of liquid from the protective carrier.

Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tilton in view of Forand.

Tilton teach the method as described above. Tilton differ from the instant claims in that the reference does not explicitly teach creating a difference in the levels of the processing fluid between the inside and outside of the protective carrier.

Forand teaches an anode containment basket, i.e. protective carrier, for holding soluble anodes within a plating bath of a continuous electroplating line, wherein the holes of the basket have the diameter of 1/4", or an area of 127 mm^2, which is within the range of the instant claim.

It would have been obvious to one having ordinary skill in the art to have recognized that a basket having a small aperture size, such as that of Forand, would create a difference in the levels of the processing fluid inside and outside the protective carrier as it is being immersed in the electrolyte solution, because the smaller aperture size would initially prevent the electrolyte from completely filling the inside of the protective carrier.

Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tilton in view of Forand, and further in view of Friedman.

Tilton and Forand teach the method as described above. Tilton differ from the instant claims in that the reference does not explicitly teach a stationary hoist or a hoist mounted to a transport carrier.

Friedman teaches a stationary hoist for vertically moving a workpiece into or out of an electroplating tank (Fig. 1). The hoist is connected to a transport carrier 42 (Fig. 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method of Tilton and Forand by using the hoist of Friedman, because it would enable the workpiece to be immersed in the solution vertically.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tilton in view Forand, and further in view of Le Bras et al.

Tilton and Forand teach the apparatus and method as described above. Tilton differs from the instant claims in that the reference does not explicitly teach a reservoir and delivery system (claims 9, 10).

Le Bras et al. teach an electrodepositing apparatus including a reservoir tank 13 (Fig. 3) and a delivery system via valve 15 and line 17. In addition, Le Bras et al. teach conveyor 37 for conveying a workpiece into the electrolytic bath.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the apparatus of Tilton and Forand by using the reservoir and delivery system of Le Bras et al., because they would help purge ions, contaminants and impurities from the system without substantially removing the desired constituents (column 2 lines 40-44 of Le Bras et al.). The system of Le Bras et al. would inherently create a difference in the levels of the processing fluid when the protective carrier of Tilton is submerged in a plating tank with the conveyor of Le Bras et al., because the protective carrier of Tilton having the aperture size of Forand would impede the flow of the fluid.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tilton in view of Uzoh et al. (US publication 2001/0050233).

Tilton teaches the apparatus as described above. Tilton differs from the instant claims in that the reference does not explicitly teach that the aperture diameters are smaller in the border regions.

Uzoh et al. teach an electrodeposition/electro-etching system wherein baffle plates having smaller aperture diameters in the border regions (Figs. 2-5) are used to promote uniformity of deposition or etching.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the apparatus of Tilton by using the baffle of Uzoh et al. wherein the aperture diameters are smaller in the border regions, because it would promote uniformity of deposition or etching.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tilton in view of Ewell (US patent 1374370).

Tilton teach the method as described above. Tilton differs from the instant claims in that the reference does not explicitly teach an orifice plate.

Ewell teaches an orifice plate wherein a series of perforations are alternately shifted into and out of registration by reciprocation of said orifice plate, thus providing for an intermittent escape of liquid (column 3 lines 43-56)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method of Tilton by using the orifice plate of Ewell, because it would allow the flow rate of the liquid to be controlled.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tilton in view of Marek (US patent 2365202).

Tilton teaches the method as described above. Tilton differs from the instant claims in that the reference does not explicitly teach a drain gate.

Marek teaches a tank having drain gates 16 (Fig. 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method of Tilton by using the drain gate of Marek, because it would facilitate quick removal of liquid in a processing tank.

Response to Arguments

Applicants' arguments have been considered but are moot in view of the new ground(s) of rejection.

The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure. US patents 4812211, 4966672 and 5472503 are hereby made of record.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan V. Van whose telephone number is 571-272-8521. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LVV
September 28, 2007

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